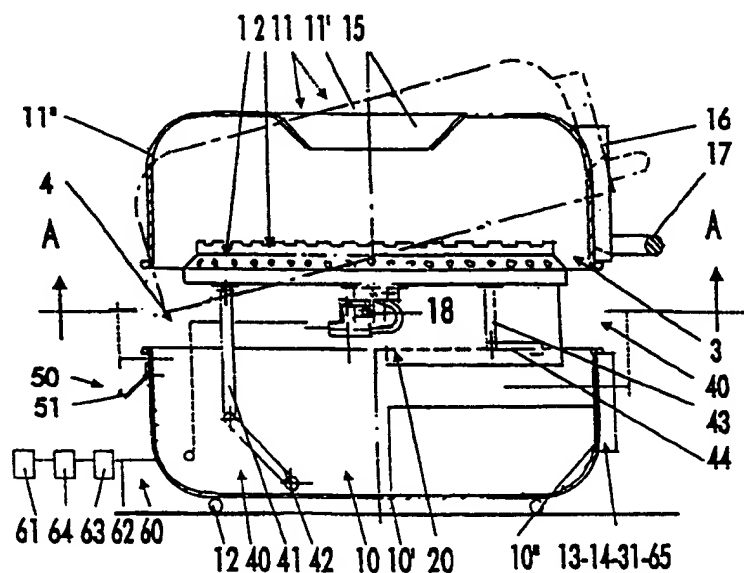




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(54) Title: OVEN FOR PIZZA



(57) Abstract

This summary is related to an application for patent of utility model for an oven, in the field of equipment for preparation of food, specially pizzas, which was developed to provide a better use and performance than the others and is comprised, substantially, by a heat providing device (1-2); a housing (10-11) which contains the first one and may be opened and closed to place the oven in the use and non use and transport positions; by an automatic device (20) which regulates the flame; an automatic operation timer device (30); a moving and stabilizing device (40) for the heat providing device (1-2) and halves (10, 11) of the housing in the use and non use positions of the oven; a lock (50) for the housing; and a gas feed circuit (60).

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OVEN FOR PIZZA

05 This specification is related to a patent of utility model for an oven, relative to the field of means to prepare food, specially pizzas, and which has a special lay-out in view to provide a better use and performance than the usual means for the same purpose.

10 As it is known, the most traditional way to bake food, specially pizzas made in pizza houses, is the wood burning oven. However, due to several reasons, this form of baking food has been undesirable to the interested parties, specially restaurants, pizza houses and similar institutions. This is due to several factors, such as difficulty to find wood for them, the complexity of the installation of wood burning ovens, the production of smoke into the environment and others. In a wide point of view, another factor which reduces the use of wood is the need to cut down trees and, as a consequence, damages to the environment, a fact which is against the values related to ecology, ever-present in the present society.

20 For such a reason, several solutions have been proposed to substitute conventional ovens for the baking of food, which did not reach total success, specially in the case of pizzas. Actually, the proposed solution normally do not give the pizzas the characteristics achieved with wood burning oven, which is one of the main points accepted by the persons who like this type of food. This makes said solutions usually unfeasible, specially in pizza houses and similar.

30 Studying such cases and trying to reach a solution for the above mentioned problems, a gas burning oven was developed, object of another application for patent of the same applicant, which substantially comprises the following: A set which provides heat to prepare the food, which includes mainly a large gas burner, with a diameter slightly larger than the containers normally used to prepare the food; and a heat distribution plate placed on said burner; a joined bell shaped gas flue which moves between two positions, one which covers and another which uncover the heat providing set; a foot structure which support the heat providing set and the gas flue; and a gas feed circuit.

40 The oven with such basic characteristics showed to be efficient, specially for pizzas, therefore overcoming the restrictions of the conventional means for the same purpose, for it gives the pizza characteristics equal to those prepared in wood burning oven, in respect to flavor, baking properties, visual appearance and others required by the consumers.

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The layout of this patent was developed to optimize the performance of the above mentioned gas burning oven, specially to bake pizzas, in such a way to provide the quality and speed required in pizza houses and similar places which trade with this type of food, and to provide an equipment easy to be handled and transported by the user. The attached drawings show the oven object of this model of utility, in which:

Figure 1 shows the oven laterally, in the non use position, when it is closed and ready for transport;

Figure 2 shows the oven laterally in the position of use, as well as the movement of the lid;

Figure 3 shows in detail an automatic device to regulate the flame of the oven and indication of movements;

Figure 4 shows in detail a driving device for time control and the indication of movements; and

Figure 5 shows the A-a cross section indicated in Figure 2 and in which it is possible to see the devices which allow the placing of the oven in the use and non use and transportation positions.

Following the above mentioned figures, the oven object of this patent of utility model is fed by gas and is destined to bake food, particularly pizzas, constituted specially by a heat providing device 1-2 to bake a pizza; a cylinder shaped housing 10-11 which contains the heat providing device 1-2 and which allows the use and non use and transport positions for the oven; an automatic flame regulating device 20 of the heat providing device 1-2, depending of the operation or non operation of the oven; an automatic time regulating device 30 for the automatic operation of the oven; a moving and stabilizing device 40 for the heat providing device 1-2 and the halves 10 and 11 of the housing, to define the use and non use and transportation positions of the oven; a closing device 50 which maintains the housing 10-11 closed in the non use position and ready to be transported; and a gas feed circuit 60.

The heat providing device 1-2 is formed by a large gas burner 1, with its diameter slightly larger than a pizza tray, in which the gas feeding circuit 60 is connected in the central and lower part; and a heat distribution plate 2 which is on the burner and provides a grooved upper surface.

The cylinder shaped housing 10-11 is formed by a lower base half 10 in which the heat providing device 1-2 is supported and joined through a moving and stabilizing device 40 between the use and non use positions for the oven; and by an upper half lid 11 which is articulated in opposite points of the heat providing device 1-2 between the positions in which it

covers and uncovers said device in the use position of the oven; Said lower 10 and upper 11 halves have their shapes substantially similar, with diameters slightly larger than that of the heat providing device 1-2, in such a way that the upper half 11 defines the ventilation space 3 in respect thereof; with said halves of the housing 10, 11 being defined by the button 10' and upper 11' walls, respectively and substantially flat, and cylindrical lateral walls 10", 11", between these and said walls 10', 11' there are rounded corners and the openings facing said halves have beading around them.

The mentioned bottom wall 10' of the lower half 10 provides outside lower projections similar to feet 12 and the lateral wall 10" has a lateral panel 13 to control the oven, where there are at least: one temperature indicator 14 for the heat distribution plate 2; a time indicator of oven operation, part of the adjustable time device 30, and an automatic lighting button.

The upper wall 11' of the upper half 11 has an outlet and a central, conic, inner hot air deflector 15 and the cylindrical lateral wall 11" has a window 16 and an handle 17 above the panel 13 of the lower half 10, and also opposite points 18 for articulation of said upper half 11 of the heat providing device 1-2, located ninety degrees in respect to the window 16 and the handle 17; said upper half lid 11 incorporates a profile for the distribution of heat on the ingredients of the pizza, defined by the cylindrical lateral wall 11", the rounded corner, the upper flat wall 11' and the conic, inner central deflecting outlet projection 15, heat distribution profile on the ingredients of the pizza, which works in collaboration with the opening of the ventilation 3, defined between the heat providing device 1-2 and the upper half lid 11 and the ventilation space 4 defined between the halves of the housing 10, 11 in the use position of the oven; working in collaboration also with the plate 2 which distributes the heat to the pizza dough; and with the flames of the burner 1 which heat the border of the pizza, acting in such a way to provide an equal baking of said pizza.

The device 20 for automatic regulation of the flame (fig. 3) is constituted mainly: by a flow regulating valve 21, intercalated in the gas feeding circuit 60, with an inlet opening connected to the pipe which comes from the gas cylinder 61, an outlet opening connected to the pipe system which goes to the gas burner 1, and a driving lever 22 subject to a frame 23, assembled close to one of the articulation points 18 of the upper half 11 of the housing, place in such a way that when said upper half of the housing

11" is in the position which covers the heat providing device 1-2 it pushes the lever 22 to the position which determines a larger flow of gas and, as a consequence, a high flame, and when the upper half of the housing 11 is in the position which uncovers the heat providing device 1-2, it fees the lever 22, which moves to a position which determines a lesser flow of gas and, as a consequence, a low flame.

The adjustable device 30 for automatic time control of the oven is an electronic timer which works with a electric valve 32-33 (figure 4) formed: by a moving terminal 32 assembled at and subject to the upper half of the housing 11; and by a fixed terminal 33 placed in the course thereof, both of them placed in such a way to drive and to bring to zero (0) mark the timer in the positions in which said upper half of the housing 11 covers and uncovers the heat providing device 1-2.

The device 40 for the moving and stabilizing of the oven in the use and non use possessions is comprised, preferably (fig. 5): by at least two parallel and equal arms 41-42 in the rear portion, which move in an plan orthogonal to the heat providing device 1-2 and formed by two articulated portions: the first portions of arms 41, adjacent ends of which articulate in the areas of the lower face of the burner 1 close to the periphery and in opposite ends of which the respective second portions of the arms 42 are articulated, the opposite ends of which articulate in the points of the bottom part 10' of the lower half 10 not in line in respect to the articulation points of the burner 1 and closer to the center of the set, with said arms moving between two positions, a short one (figure 1) and a long one (figure 2), respectively, to the use and non use positions of the oven, in which the halves of the housing 10, 11 are the respective positions close and separate one in respect to the other.

The device 40 has also two front arms 43-44 which move in parallel plan to the heat providing device 1-2 and are formed: by the respective fixed 43 portions, extended orthogonally from peripheral points of the front region of the lower face of the gas burner 1 and with the ends of which are free and articulate the corresponding arms 44, which move in a plan parallel to the heat providing device 1-2 between two different positions: a short one, when they are under the heat providing device 1-2 and corresponding to the non use position of the oven, when the halves of the housing 10, 11 are together and united by the locks 50; and another extended position when they are projected outward under the periphery of the gas burner 1, supported on the edge of the lower half 10 and corresponding to the use position of the oven, when the heat providing device 1-2 and the upper half of the

housing 11 are suspended in respect to the lower half of the housing 10, defining a wide ventilation area 4 between them, which is in communication with the ventilation area 3 defined between the heat providing device 1-2 and the upper half of the housing 11.

05 The closing set 50 comprises several locks regularly spaced and of the type formed by hooks 51 mounted on the outside surface of the lower half of the housing 10 and which are clamped to the beading edge of the upper half of the housing 11.

10 The gas circuit 60 comprises essentially a pipe system 62 which comes from the gas cylinder 61 to the burner 1, having a flow regulating valve 21; a pressure gauge 63 to control the gas pressure in the gas burner 1; a valve 64 for the opening, closing and manual flow regulation of the gas to the burner 1; and an electric lighter 65 driven by a press button in the panel and others.

15 In the non use position (figure 1), the oven has the two halves of the housing 10 and 11 juxtaposed and interconnected by the locks 50, when the portions of the rear arm 41-42 are contracted and the front arms 43-44 are pushed under the heat providing device 1-2 (dotted line of figure 5). In this position, the oven may be transported being held by the handle 17.

20 In order to put the oven in the use position, the locks 50 are open, the heat providing device 1-2 is pushed upward as well as the upper half of the housing 11, with the rear arms 41-42 extending and forcing the set 1-2, away from the lower half of the housing 10, when the front arms 42-43 are articulated outwards (full line of figure 5) and supported on the border of the lower half 10.

25 In this position, in order to start the operation of the oven, the manual valve 64 is put in the open position; the upper half of the housing 11 is pushed to the position which uncovers the burner 1; the burner is automatically lit and a low flame is kept by the flame regulating device 20; The pizza is placed on the heat distribution plate 2; the upper half of the housing 11 is lowered on the heat providing device 1-2 and the pizza; automatically the flame regulating device 20 increases the flow of gas and the valve operation device 31 starts the timer 30.

30 In this position, in order to start the operation of the oven, the manual valve 64 is put in the open position; the upper half of the housing 11 is pushed to the position which uncovers the burner 1; the burner is automatically lit and a low flame is kept by the flame regulating device 20; The pizza is placed on the heat distribution plate 2; the upper half of the housing 11 is lowered on the heat providing device 1-2 and the pizza; automatically the flame regulating device 20 increases the flow of gas and the valve operation device 31 starts the timer 30.

35 The intensity and position of the flames around the whole perimeter of the pizza provides, through the large diameter border 1, the appropriate baking of the peripheral area of the pizza. The heating plate 2, through the peripheral flames, allow the uniform distribution of heat and, as a consequence, the equal baking of the whole pizza dough. The

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internal profile of the upper half of the housing 11, defined by the inner surface of the lateral cylindrical face 11", rounded corner, upper face 11" and deflector cone 15, directs and distributes the hot air on the pizza, therefore providing the appropriate baking of the pizza covering. The ventilation provided by the area 4 between the lower half 10 and the set formed by the heat providing device 1-2 and the upper half of the housing 11, the area 3 between these last two portions, the inner space and the upper outlet 15 act in such a way to maintain the flames in an appropriate size distributing the appropriate heat. The interaction of such effects act also in order to provide an uniform baking of all pizza and within a short time, of approximately two and one half minutes, determined by the timer 30.

Upon the end of the preparation of the pizza, the upper half of the housing 11 is pushed upward, the flame regulating device 20 brings the flames to a minimum, the pizza is withdrawn and a new work cycle is begun.

With the above mentioned basic construction, the oven object of this model of utility may have changes relative to materials, dimensions, construction details and/or configuration, without leaving the requested protection. Therefore, other resources may be provided in the oven, typical of such equipment, such as automatic lighter which may start upon the opening of the upper half of the housing 11; sound and/or visual signal devices indicating the end of the operation, working with the timer; and others.

Therefore, this oven, considering its superior performance, both for the final characteristics of the product; the facility of feeding lines (gas); the simple installation, specially in respect to the small area which it uses; and the facility of operation, speed in the preparation of the pizza; the lack of smoke which acts against environment; and other aspects, may be used to bake pizzas in business which work in this area, such as pizza houses, restaurants, snack bars and similar places, instead of the normally used ovens which burn wood.

On the other hand, considering the efficiency, small volume and weight, it is easily transported and the oven may be used also as a household device and may be placed within a home or temporarily in other places of use, such as beach or field houses, camp sites, and others.

CLAIMS

1) PIZZA OVEN comprised essentially by a heat providing device (1)-(2); a chamber (10)-(11), a control device (20), (30); gas feed circuit (60), characterized by the fact that
05 it comprises a heat providing device (1)-(2), formed by a gas burner (1) with diameter slightly larger than a pizza plate, connected in the central and lower region to the gas feed circuit (60); and a heat distribution plate (2) placed on the burner; a cylindrical housing (10)-(11) with the heat
10 providing device (1)-(2) which has the use and non use and transport positions for the oven; an automatic flame regulating device (20) of the heat providing device (1)-(2), for the operation and non operation of the oven; an automatic timer (30) for the operation of the oven; a moving and
15 stabilizing device (40) of the heat providing device (1)-(2) and the housing halves (10) and (11), to define the use and non use and transport positions of the oven; a lock (50) which maintains the housing (10)-(11) closed in the non use position and ready for transport; said cylindrical housing
20 (10)-(11) is formed by: a lower base half (10) in which the heat providing device (1)-(2) is articulated through the moving and stabilizing device (40) between the use and non use positions of the oven; and by a upper half of the lid (11) which moves through opposite points of the heat
25 providing device (1)-(2) between the positions which cover and uncover it, in the use position of the oven; said lower (10) and upper (11) halves having substantially equal configurations, diameters slightly larger than the heat providing device (1)-(2) in such a way that the upper half
30 (1) defines the ventilation area (3); said halves of the housing (10), (11) are defined by the bottom (10)' and upper (11)' walls, respectively, substantially flat and cylindrical lateral walls (10)", (11)", between then and the falls (10)' - (11)' rounded corners are defined and the openings of said
35 halves are provided with beading sections in the border; said bottom wall (10)' of the lower half (10) provides lower outside projections as feet (12) and the lateral wall (10)" has a lateral panel (13) of control of the oven in which there are at least one temperature indicator (14) for the
40 heat distribution plate (2); an oven operation timer (31) part of the adjustable timer device (30) and an automatic lighter push button; the upper wall (11)' of the upper half (11) has a central, conic, inner outlet and hot air deflector (15) and the cylindrical lateral wall (11)" has a window (16)
45 and a handle (17) above the panel (13) of the lower half (10), and also opposite points (18) for articulation of said

upper half (11) of the heat providing device (1)-(2), located ninety degrees in respect to the window (16) and the handle (17); said upper half lid (11) incorporates a profile for the distribution of heat on the ingredients of the pizza, defined by the cylindrical lateral wall (11)", the rounded corner, the upper flat wall (11)' and the conic, inner central deflecting outlet projection (15), heat distribution profile on the ingredients of the pizza, which works in collaboration with the opening of the ventilation (3), defined between the heat providing device (1)-(2) and the upper half lid (11) and the ventilation space (4) defined between the halves of the housing (10), (11) in the use position of the oven; working in collaboration also with the plate (2) which distributes the heat to the pizza dough; and with the flames of the burner (1) which heat the border of the pizza, acting in such a way to provide an equal baking of said pizza; the device (20) for automatic regulation of the flame is constituted mainly: by a flow regulating valve (21), intercalated in the gas feeding circuit (60), with a driving lever (22) subject to a frame (23), assembled close to one of the articulation points (18) of the upper half (11) of the housing, place in such a way that when said upper half of the housing (11) is in the position which covers the heat providing device (1)-(2) it pushes the lever (22) to the position which determines a larger flow of gas and, as a consequence, a high flame, and when the upper half of the housing (11) is in the position which uncovers the heat providing device (1)-(2), it fees the lever (22), which moves to a position which determines a lesser flow of gas and, as a consequence, a low flame; the adjustable device (30) for automatic time control of the oven is an electronic timer which works with a electric valve (32)-(33) formed: by a moving terminal (32) assembled at and subject to the upper half of the housing (11); and by a fixed terminal (33) placed in the course thereof, both of them placed in such a way to drive and to bring to zero (0) mark the timer in the positions in which said upper half of the housing (11) covers and uncovers the heat providing device (1)-(2); the device (40) for the moving and stabilizing of the oven in the use and non use possessions is comprised, preferably: by at least two parallel and equal arms (41)-(42) in the rear portion, which move in an plan orthogonal to the heat providing device (1)-(2) and between two positions, one retracted without support of the set formed by the heat providing device (1)-(2) and upper half of the lid (11) and one extended to support it, corresponding respectively to the use and non use positions of the oven, in which the halves of the housing (10), (11) are in positions respectively

juxtaposed and separated one from the other, defining the ventilation area (4) which communicates with the ventilation area (3); and two front arms (43)-(44) which move in parallel plan to the heat providing device (1)-(2), between the support position on the border of the lower half (11) of the housing and retracted under the heat providing device (1)-(2), corresponding to the positions of use and non use of the oven, respectively; the lock set (50) comprises several locks regularly spaced and of the type formed by hooks (51) mounted on the outside surface of the lower half of the housing (10) and which are clamped to the beading edge of the upper half of the housing (11); the gas circuit (60) comprises essentially a pressure gauge (63) to control the gas pressure in the gas burner (1); a valve (64) for the opening, closing and manual flow regulation of the gas to the burner (1); and an electric lighter (65) driven by a press button in the panel.

2) PIZZA OVEN, as claimed in 1, characterized by the fact that optionally it may have a sound and/or visual signal for the end of operation, which works in collaboration with the timer.

3) PIZZA OVEN, as claimed in 1, characterized by the fact that optional is lighter for the burner is automatic and subject to the opening of the upper half lid (11).

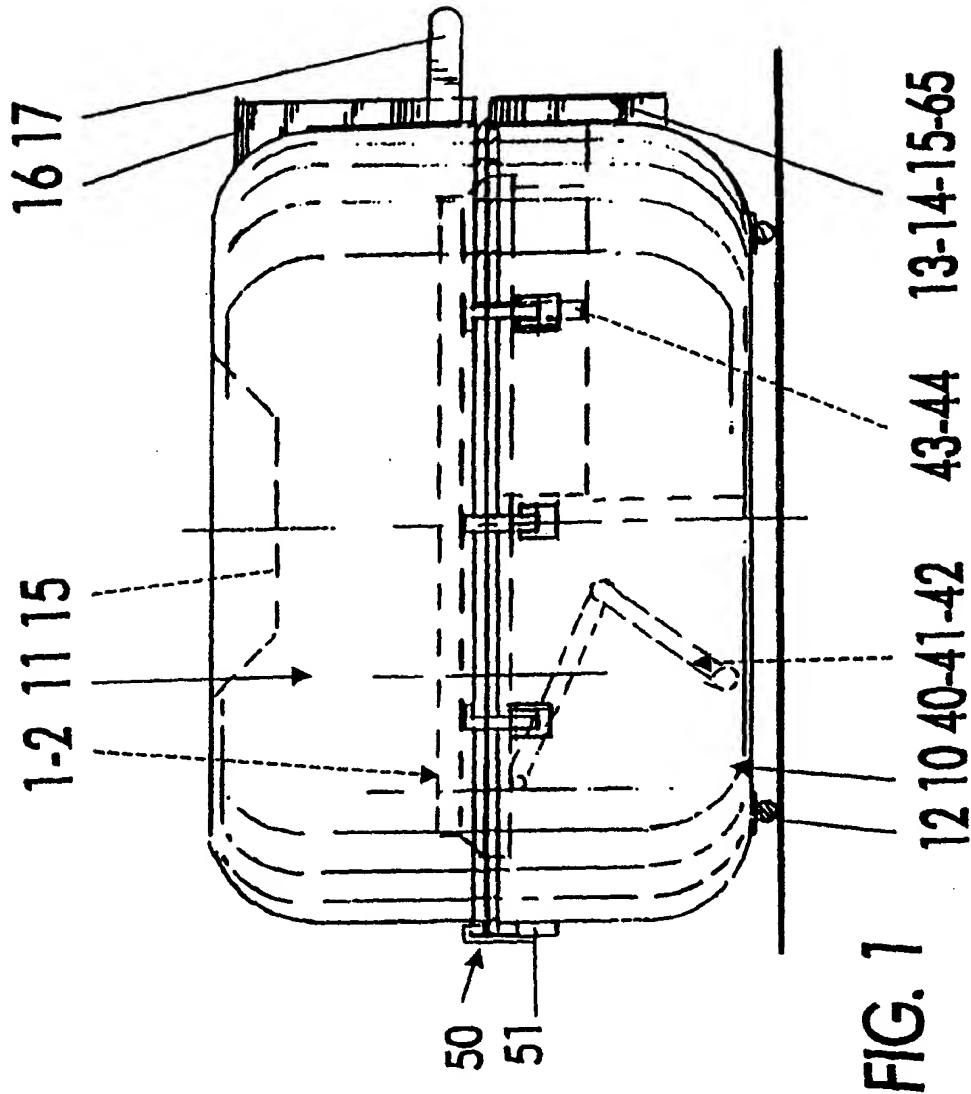
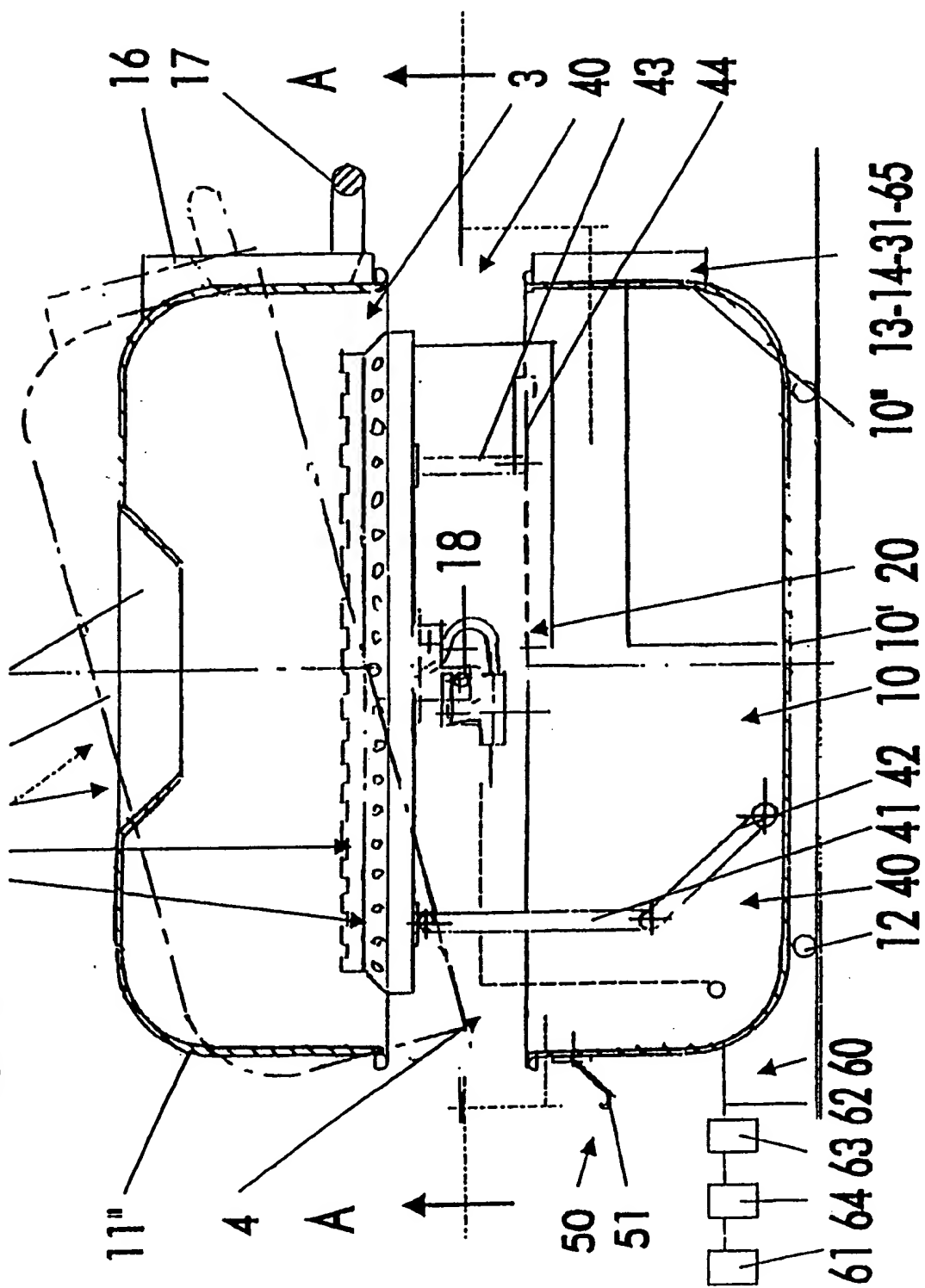
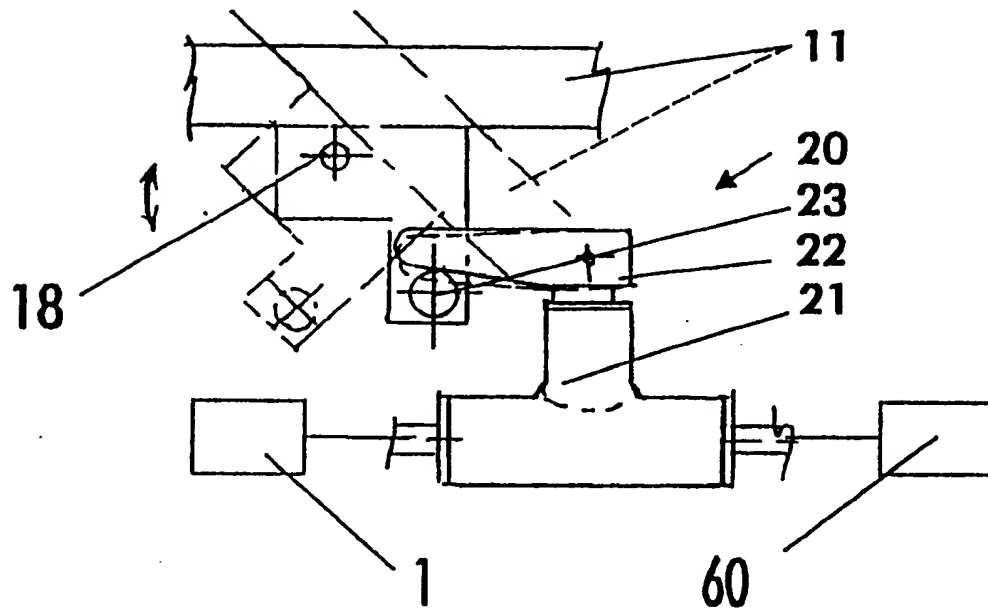
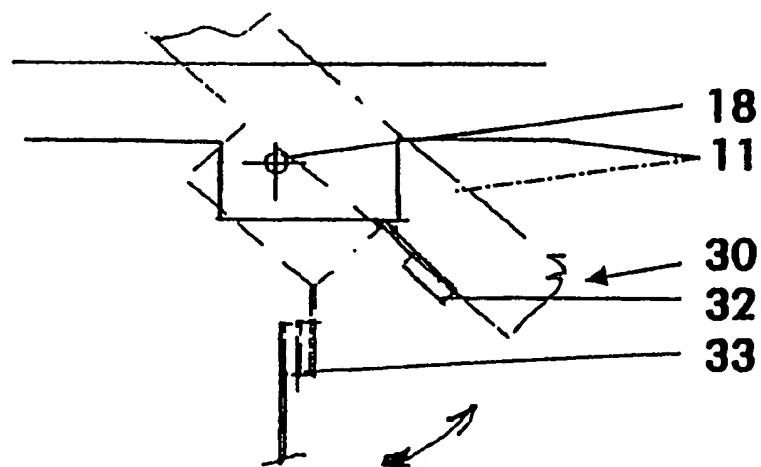


FIG. 2 12 11 11' 15



**FIG. 3****FIG. 4**

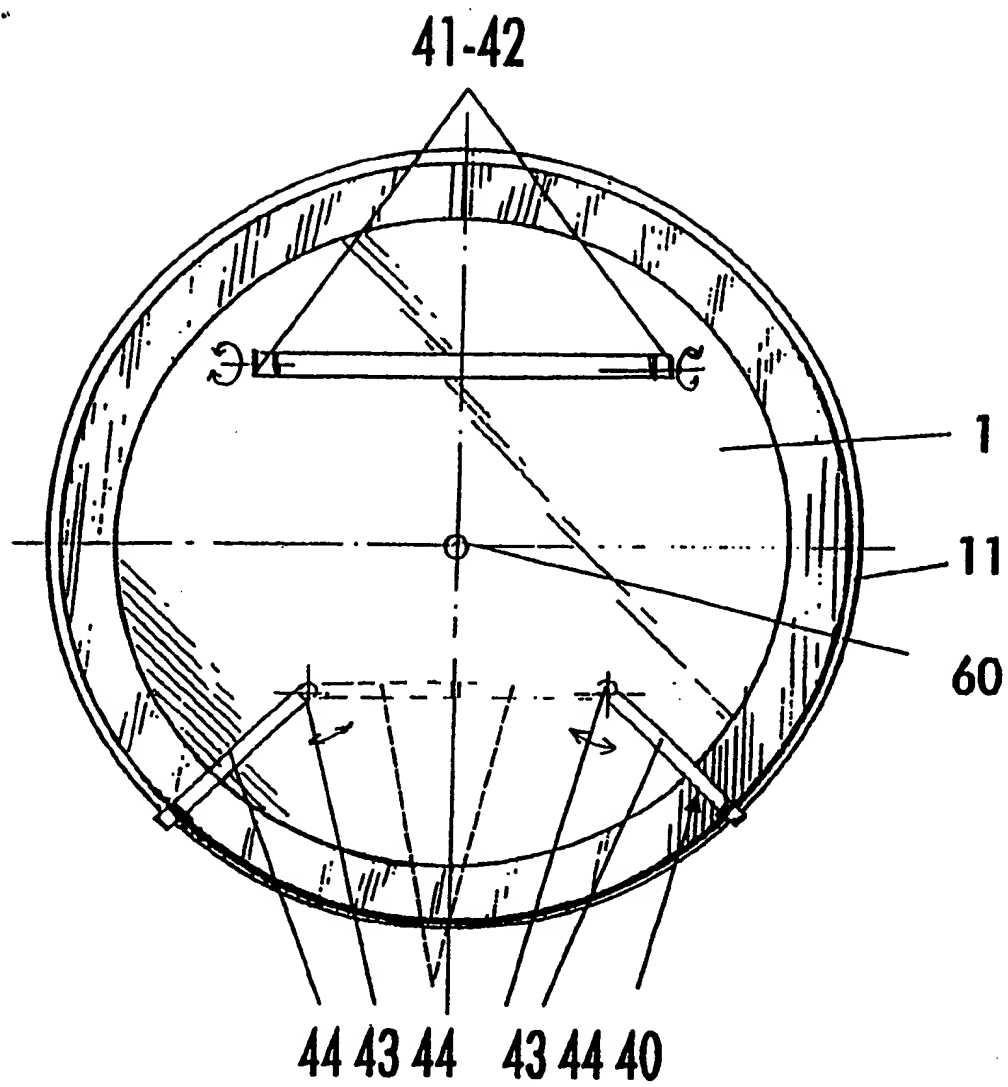


FIG. 5

INTERNATIONAL SEARCH REPORT

International Application No

PCT/BR 99/00028

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A47J37/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A47J F24C A21B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 42 29 428 A (IBRAHIM AHMED) 10 March 1994 (1994-03-10) the whole document	1
A	WO 97 02777 A (HASBRO INT INC ; BROWN STUART DAVID (GB)) 30 January 1997 (1997-01-30) page 4, column 34 - page 5, column 2	1
A	DE 94 20 600 U (FUCHS THOMAS DIPL ING FH) 16 March 1995 (1995-03-16) claim 1; figure 1	1
A	US 2 188 757 A (MOON, H.J.) 30 January 1940 (1940-01-30) column 1, line 10 - line 36; figures 3-5	1

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Date of the actual completion of the international search

29 July 1999

Date of mailing of the international search report

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